Trend Study 25C-10-98

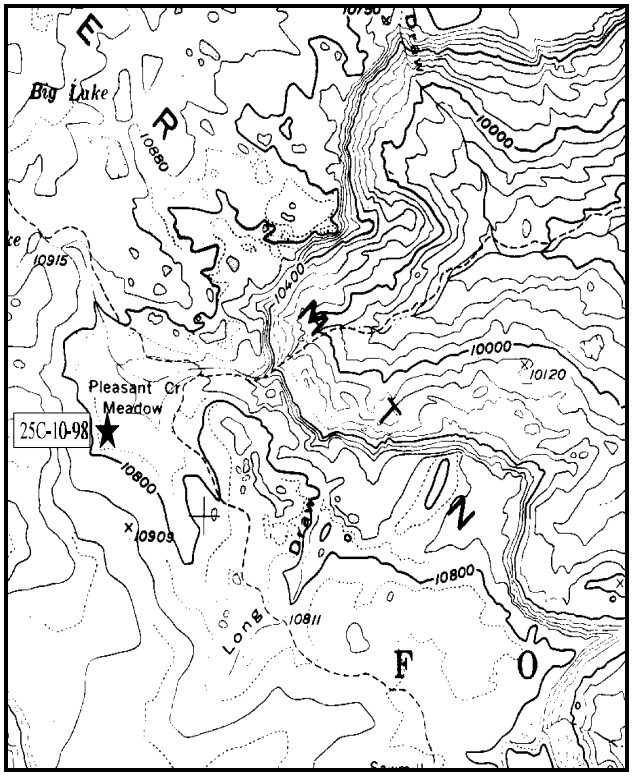
Study site name: Pleasant Creek Exclosure-In . Range type: Dry Meadow .

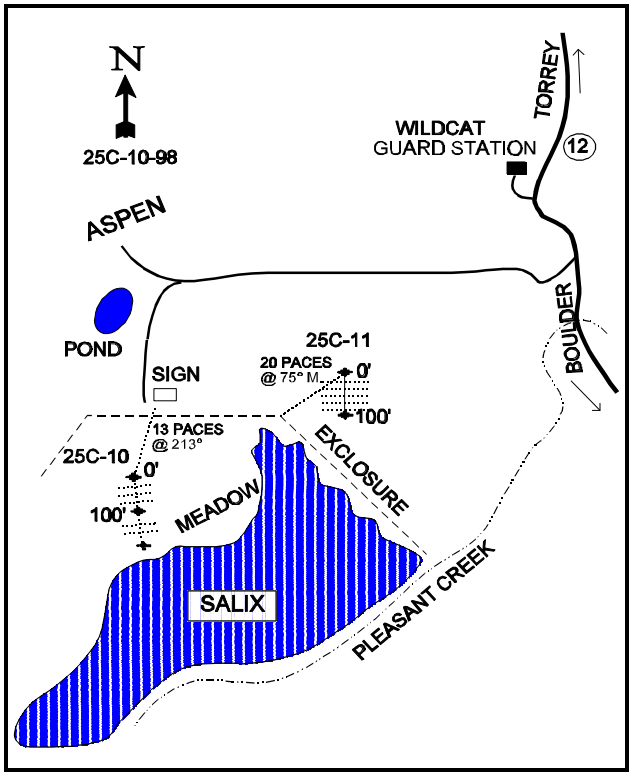
Compass bearing: frequency baseline 222 M degrees.

Footmark (first frame placement) 5 feet. frequency belt placement; line 1 (11, 59 &95ft), line 2 (34 & 71ft).

LOCATION DESCRIPTION

Heading south on Highway U-12 between Grover and Boulder, look for the USFS Wildcat Guard Station on the west side of the road. Just south of the Wildcat Guard Station and before crossing Pleasant Creek, turn off onto the Pleasant Creek Road and head west 0.75 miles to a cattleguard. This road gets very rough, and a four-wheel drive is recommended. From the cattleguard, go another 1.75 miles to a gate. After another 0.2 miles, you'll come to the Meek's Lake Fork. Go left here for 0.6 miles to where the road ends at an exclosure. (At one point, the road appears to end in a meadow, but continue on to the exclosure). From the exclosure sign, trend study #25C-10 is 13 paces a way at 215° magnetic. It is marked by browse tag (which lies within the exclosure) #9051 and runs at 222° magnetic.





Map Name: Deer Creek Lake

Diagrammatic Sketch

Township 31S , Range 5E , Section 19

UTM 4216724.312 N, 465983.022 E

DISCUSSION

Trend Study No. 25C-10 (44-10)

The Pleasant Creek Exclosure (inside) was a new study that was established in 1991 and is located within an exclosure made with a "let-down" fence. This site was initiated by the U.S. Forest Service and DWR to help determine use by elk in the area. The exclosure is located on a meadow surrounded by aspen on the north and willows on the south. It was built in 1990 around 10 acres of meadow, willow, and creek bottom along Pleasant Creek. The site is high in the aspen-conifer zone at about 9,700 feet in elevation. In the past, exclosure data has usually not been very useful for determining elk use, since they do not have the same abilities or inclination as deer at jumping fences. However, pellet group data from inside the exclosure in 1994 did show some elk use as well as cattle use. The fence is not well maintained and cows have gotten inside the exclosure. Pellet group data from 1998 estimate 9 elk and 33 cow days use/acre. Only one deer pellet group was found. Deer and elk pellet groups were hard to see in 1998 due to the dense vegetation.

The soil is moderately deep with an effective rooting depth (see methods) of almost 18 inches. It is a dark brown or black colored soil with a sandy loam texture and a moderately acid pH (6.0). The soil is fertile with high amounts of organic matter. Large rocks and boulders occur throughout the area and throughout the soil profile. Bare soil is rare, with most ground cover as herbaceous vegetation. Erosion is not a problem at this time.

The vegetation is composed of a variety of forbs and grasses. The only browse species encountered was a *Salix* spp. Kentucky bluegrass is the dominant grass, an increaser with heavy livestock grazing. It currently ('98) provides 83% of the grass cover. Slender wheatgrass, a sedge, meadow barley, and plains bluegrass are also fairly common. During the 1998 reading, forbs were more abundant and produced more cover than grasses. Composition is dominated by increasers including: pussytoes, pacific aster, silverweed, and northwest cinquefoil, dandelion, and hollyleaf clover. These species provided 98% of the forb cover in 1994 and 95% in 1998.

1991 APPARENT TREND ASSESSMENT

The soils are in good condition. The trend is stable with no change anticipated in the foreseeable future. Browse trend for this site is not critical for it is not part of the normal winter range or critical winter range. The only browse species encountered was a willow. The herbaceous understory is diverse with 38 species found. These plants appear to be moderate to heavily grazed each summer. Outside the exclosure grazing is severe. The high quadrat frequency values for Kentucky bluegrass, yarrow, and aster would indicate over grazing for a long period of time. Trend is considered stable, but the composition is not ideal. This is a new site so there is not any previous data to compare it with to determine trend.

1994 TREND ASSESSMENT

The soils are in good condition. The trend is stable with no changes being anticipated. Browse for this site are not critical and this area is not part of a normal winter range or critical winter range. The herbaceous understory is diverse. The trend for the herbaceous species is down, with significant decreases for nested frequency for both grasses and forbs. The most abundant species is Kentucky bluegrass which is the only species that showed an increase during this period. This exclosure showed a great deal of cow sign which indicated that the fence was down sometime in the recent past.

TREND ASSESSMENT
soil - stable
browse - not important on this high summer range
herbaceous understory - significant downward trend, probably closely related to the prolonged drought since 1985, but still good condition

1998 TREND ASSESSMENT

The soil trend is improved slightly since 1994 due to excellent production of herbaceous vegetation this season. Percent bare ground is only 1%. There is no significant browse component on this site and it is not important on this summer range. Trend for the herbaceous understory is up slightly. Sum of nested frequency of grasses remains similar to 1994 estimates but frequency of forbs has increased. Production is also much higher compared to 1994. Composition is still totally dominated by increasers however, with Kentucky bluegrass providing 83% of the grass cover and weedy, low growing increaser forbs make up 95% of the forb cover. Cattle are still getting into the exclosure and utilizing some of the forage.

TREND ASSESSMENT
soil - up slightly
browse - none
herbaceous understory - up slightly, but composition dominated by increasers

HERBACEOUS TRENDS --
Herd unit 25C, Study no: 10

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'91	'94	'98	'91	'94	'98	'94	'98
G	Agropyron trachycaulum	$_{b}$68	$_{a}$39	$_{a}$53	28	15	21	.29	1.64
G	Carex spp.	$_{c}$263	$_{b}$168	$_{a}$89	81	58	37	4.07	2.03
G	Deschampsia caespitosa	$_{c}$89	$_{b}$12	$_{a}$-	38	4	-	.24	-
G	Festuca ovina	$_{a}$-	$_{b}$24	$_{c}$49	-	8	18	.71	.24
G	Hordeum brachyantherum	$_{a}$2	$_{a}$3	$_{b}$17	1	1	8	.03	1.00
G	Juncus balticus	$_{b}$46	$_{a}$18	$_{a}$6	19	9	3	.36	.09
G	Koeleria cristata	5	-	20	3	-	8	-	.21
G	Muhlenbergia montana	14	1	5	6	1	2	.03	.03
G	Phleum alpinum	$_{b}$114	$_{a}$5	$_{a}$7	37	3	3	.04	.01
G	Poa arida	$_{a}$6	$_{b}$45	$_{b}$64	2	14	25	.98	2.53
G	Poa pratensis	$_{a}$296	$_{b}$345	$_{b}$365	93	92	97	23.09	40.04
G	Sitanion hystrix	$_{a}$-	$_{a}$5	$_{b}$17	-	2	8	.06	.09
G	Stipa comata	-	8	12	-	3	7	.04	.13
G	Stipa lettermani	$_{ab}$21	$_{b}$49	$_{a}$17	11	19	9	.63	.24
Total Annual Grasses		0	0	0	0	0	0	0	0
Total Perennial Grasses		924	722	721	319	229	246	30.59	48.33
F	Achillea millefolium	$_{b}$222	$_{a}$156	$_{ab}$173	72	56	59	2.13	9.76
F	Agoseris glauca	-	-	7	-	-	2	-	.01
F	Allium spp.	-	2	1	-	2	1	.01	.00
F	Antennaria rosea	11	2	5	4	1	2	.00	.03
F	Androsace septentrionalis (a)	$_{a}$-	$_{b}$13	$_{c}$81	-	5	32	.02	.72
F	Artemisia dracunculus	$_{c}$30	$_{b}$8	$_{a}$-	13	4	-	.02	-
F	Arabis drummondi	$_{b}$10	$_{c}$-	$_{a}$27	6	-	14	-	.15
F	Arenaria fendleri	9	-	-	5	-	-	-	-

Type	Species	Nested Frequency '91	'94	'98	Quadrat Frequency '91	'94	'98	Average Cover % '94	'98
F	Aster chilensis	$_{b}$269	$_{a}$90	$_{a}$66	85	33	23	.80	1.20
F	Cerastium beeringianum	9	-	-	4	-	-	-	-
F	Chenopodium album (a)	-	4	-	-	2	-	.01	-
F	Draba spp. (a)	-	$_{a}$1	$_{b}$41	-	1	20	.00	.12
F	Epilobium spp.	4	-	-	1	-	-	-	-
F	Equisetum variegatum	1	-	-	1	-	-	-	-
F	Erigeron flagellaris	$_{a}$33	$_{b}$61	$_{a}$21	14	24	8	.32	.52
F	Erigeron spp.	$_{a}$-	$_{b}$10	$_{b}$34	-	3	12	.06	.84
F	Eriogonum spp.	-	-	3	-	-	1	-	.00
F	Galium spp.	10	-	-	4	-	-	-	-
F	Geum spp.	9	-	-	6	-	-	-	-
F	Lappula occidentalis (a)	-	$_{b}$4	$_{a}$1	-	3	1	.04	.00
F	Lomatium dissectum	-	6	-	-	2	-	.01	-
F	Lomatium spp.	-	2	3	-	1	1	.00	.00
F	Lychnis drummondii	-	-	2	-	-	1	-	.00
F	Potentilla anersina	-	140	128	-	50	48	4.26	7.74
F	Polygonum douglasii (a)	-	10	5	-	3	3	.01	.01
F	Potentilla gracilis	$_{b}$77	$_{a}$28	$_{a}$19	28	12	10	1.09	.56
F	Ranunculus alismaefolius	1	-	-	1	-	-	-	-
F	Rumex salicifolius	5	-	13	2	-	6	-	.34
F	Silene spp.	-	1	-	-	1	-	.00	-
F	Taraxacum officinale	$_{a}$332	$_{b}$285	$_{a}$302	97	93	91	6.85	19.22
F	Thalictrum fendleri	2	-	-	1	-	-	-	-
F	Trifolium gymnocarpon	$_{b}$265	$_{a}$147	$_{a}$168	76	42	49	11.06	15.38
F	Unknown forb-perennial	8	-	-	3	-	-	-	-
F	Viola spp.	$_{b}$17	$_{a}$-	$_{a}$5	7	-	2	-	.01
Total Annual Forbs		0	32	128	0	14	56	0.08	0.85
Total Perennial Forbs		1324	938	977	430	324	330	26.67	55.83

Values with different subscript letters are significantly different at % = 0.10

BROWSE TRENDS --
Herd unit 25C, Study no: 10

Type	Species	Strip Frequency '94	'97	Average Cover % '94	'98
B	Populus tremuloides	0	0	-	.00
Total for Browse		0	0	0	0.0

CANOPY COVER --
Herd unit 25C, Study no: 10

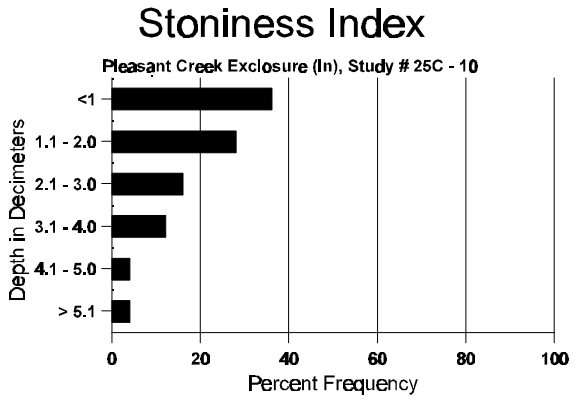
Species	Percent Cover '98
Populus tremuloides	10

BASIC COVER --
Herd unit 25C, Study no: 10

Cover Type	Nested Frequency '94	'98	Average Cover % '91	'94	'98
Vegetation	394	395	75.75	62.59	81.70
Rock	166	80	2.25	6.29	4.46
Pavement	19	16	0	.34	.46
Litter	327	391	15.50	16.88	81.86
Cryptogams	18	34	.25	.09	.19
Bare Ground	135	57	6.25	6.08	.98

SOIL ANALYSIS DATA --
Herd Unit 25C, Study # 10, Study Name: Pleasant Creek Exclosure (In)

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
17.6	42.3 (17.7)	6.0	52.0	32.2	15.8	6.2	31.4	252.8	.8



PELLET GROUP FREQUENCY --
Herd unit 25C, Study no: 10

Type	Quadrat Frequency '94	'98
Elk	31	7
Deer	-	1
Cattle	30	18

BROWSE CHARACTERISTICS --
Herd unit 25C, Study no: 10

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Populus tremuloides																		
S	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	98	3	-	-	-	-	-	-	-	-	3	-	-	-	60			3
X	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'91	00%	00%	00%	None
'94	00%	00%	00%	None
'98	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'91	0	Dec:	-
	'94	0		-
	'98	0		-